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THREE NEW SPECIES FROM AN UPPER MIOCENE OYSTER "REEF" IN TAMPA BAY

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Plates 4, 5; text fig. 1

The Tertiary beds around Tampa Bay have been represented in mineralogical and shell cabinets since the middle of the last century. The beach rocks near Ballast Point, especially those containing the silicified shells and corals, attracted the attention of army officers stationed at old Fort Brooke at the head of Tampa Bay. John H. Allen, a Lieutenant of Artillery in the U. S. Army of Florida, reported at some length in the *American Journal of Science,* 1846, on the general character of the geology of the western part of the Bay. Even in that year the silicified organic masses were well known to collectors as the "chalcedony from Tampa Bay." The so-called "Tampa Silex beds" have been exhaustively studied by Dall and subsequent investigators and have proved to be of lower Miocene age.

The upper Miocene and Pliocene deposits of the Tampa Bay district were unrecognized until the Florida boom in real estate in 1924–1926. Highly fossiliferous sands were uncovered in developments directly east of Pinellas Park, St. Petersburg (locality 2 on key map). A superb collection, probably synchronous with the Caloosahatchie fauna, was assembled by William G. Fargo of St. Petersburg.

A third fauna apparently derived from an upper Miocene oyster "reef" was dredged off the southeastern end of Snell Island. According to Charles R. Locklin of St. Petersburg, Snell Island was subdivided in 1925. The island was united

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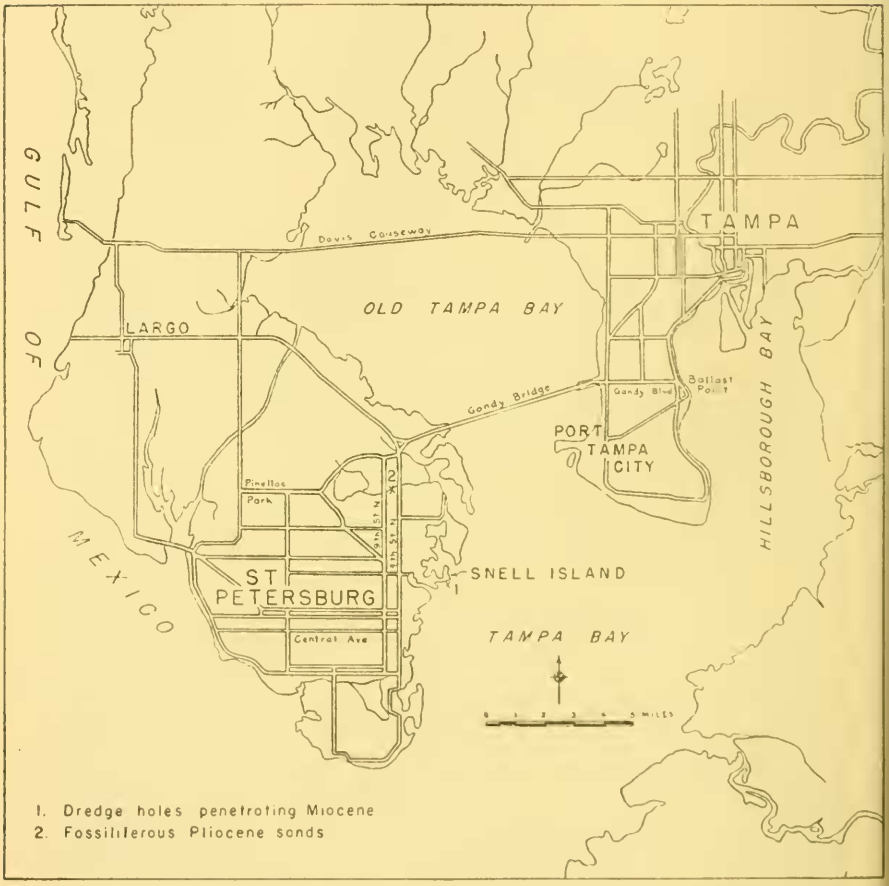
with the mainland, and the neck filled in with dredged sand and clay. The dredge which excavated to a depth of 25 feet penetrated the "reef." The interstices between the closely packed "reef" oysters and most of the interiors of the double valves are



Map of Tampa Bay and environs

filled with clear quartz sand and light gray limey clay. The fauna recovered from the "reef" includes a few species not hitherto recorded. The description of two oysters and a *Placunanomia* follows.

PLACUNANOMIA PINELLA Gardner, n. sp. Plate 4, figures 1, 2, 5, 6.

Shell rather large, commonly warped, subcircular to ovate; dorsal area squarish. Outer margin broadly and regularly fluted in some individuals; in others, as in the type, irregularly warped and rippled. Irregular radial or oblique surficial threading developed over the entire shell but commonly rubbed off. Cardinal crurae in right valve, elongate, sturdy, converging at a small angle; fitted into the corresponding depression in the left valve; lateral margins of depression much thickened; armature of left valve imperfectly preserved in all available material. Scar of byssal plug distinct, vertically elongated, placed ventral and slightly anterior to the cardinal crurae. Single adductor scar very large, linguiform, the rounded ventral margin of the scar reaching in some individuals three-fourths of the distance from the dorsal margin to the base. Byssal scar indistinct.

Dimensions: Double valves; height, 77 millimeters; width, 72 millimeters; thickness, 31 millimeters.

Locality: Spoil bank from dredgings of upper Miocene in Tampa Bay off Snell Island, St. Petersburg, Pinellas County, Florida.

Holotype, paired valves: U. S. National Museum No. 559874. *Topotypes,* 9 sets of paired valves and 6 single valves: U. S. National Museum No. 559875.

Placunanomia pinella differs in the development of a secondary radial threading from *Placunanomia plicata* Tuomey and Holmes of the Duplin marl of the Carolines, Georgia, and Florida. The more regular, worn shells are commonly difficult to separate from the Duplin species.

OSTREA LOCKLINI Gardner, n. sp. Plate 4, figures 3, 4; Plate 5, figures 1, 2.

Shell of medium size, broadly falcate, attached by only a small area on the left umbone. Valves subequal, the right valve a little smaller, more compressed and less strongly rippled than the left. Anterior and ventral margins forming a broad arc, the posterior lateral margin rather strongly concave. Marginal folds deep, confined in some individuals to the outer arc, in other individuals originating in the umbonal area; average number 5 or 6. Concentric sculpture feeble, incremental only. Possibly a crude radial cording may be developed, but only faint traces

are discernible on the weathered surfaces. Ligament area small, low, flattened, depressed medially in the left valve. Inner marginal denticulations very fine, extending along the inner posterior lateral margin and at least a third of the way down the inner surface of the anterior lateral and ventral margin. Muscle scar relatively large, pyriform, posterior, distinct.

Dimensions: Height, right valve, 56 millimeters; left valve, 59 millimeters; width, right valve, 38 millimeters; left valve, 41 millimeters; thickness of double valves, excluding marginal rippling, 16 millimeters; including marginal rippling, 21 millimeters.

Locality: Spoil bank from dredgings of upper Miocene in Tampa Bay off Snell Island, St. Petersburg, Pinellas County, Florida.

Holotype, paired valves: U. S. National Museum No. 559870. *Topotypes,* 5 sets of paired valves and 4 single valves: U. S. National Museum No. 559871.

Paired valves of the related *Ostrea sculpturata* Conrad are common in the same dredgings. The right and left valves of *O. sculpturata* are less similar to each other in size, outline, and sculpture pattern than those of *O. locklini.* The fluted crescent outline is exceptional in *O. sculpturata,* but is the normal form of *O. locklini.* The plications in *O. sculpturata* commonly number at least twice those of *Ostrea locklini* and are consequently narrower and sharper and usually originate nearer to the tips of the umbones.

Ostrea locklini has not been recognized in the outcrop.

The species is named in honor of the donor, Mr. Charles R. Locklin.

Ostrea coxi Gardner, n. sp. Plate 5, figures 3–6.

Shell of medium size, trigono-falcate. Right valve much smaller than the left, flattened and sculptured only with concentric laminae. Left valve also compressed but not so much so as the right; sculptured with concentric laminae and with radial lirae; laminae worn down on all individuals but, in fresh specimens, probably free-edged and ruffled, as in *Ostrea disparilis;* radial liration irregular, strongest near the beak, restricted to the left valve. Beaks very narrow, produced and bent strongly backward. Ligament groove also very narrow, elongated parallel to the anterior dorsal margin. Posterior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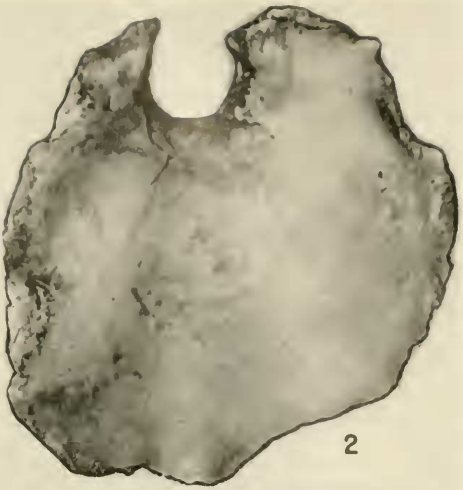
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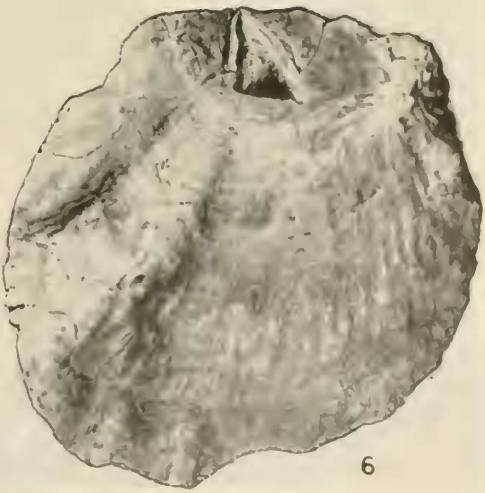
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